

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

OCCURRENCE OF SCOTT'S GRAY FOX IN PROBABLY
RECENT CAVE DEPOSITS IN KENTUCKY.

BY OLIVER P. HAY.

From Prof. Arthur M. Miller, of the University of Kentucky, the writer has received for examination a skull of a gray fox which was found in the Breck Smith cave, situated about 8 miles west of Lexington, Kentucky. From the same cave have been exhumed human remains, bones of a buffalo, bones and teeth of a wolf; from a neighboring cave have been secured remains of a deer and bones and teeth of a bear. It is believed by Professor Miller that the cave had not been entered since the coming of white men. The remains found probably do not date back to the Pleistocene.

On comparison of the skull with those of specimens of *Urocyon cinereoargenteus* from Atlantic coast States and with one from Mt. Carmel, Illinois, important differences were noted. The Kentucky skull is broader at the postorbital processes; these processes are larger and more decurved; the bullae are more flattened, and the teeth are thinner. On comparison with specimens of *U. cinereoargenteus scotti* (Mearns) from New Mexico it is found that the latter present characters which are nearly identical with those of the Kentucky specimen. Below are given measurements of the molar teeth and of various parts of the skull of the specimen from Kentucky; of a skull from New Mexico (No. 35713, U. S. Nat. Mus.); of a skull, somewhat injured, from Mt. Carmel, Ill. (No. 38503, U. S. Nat. Mus.); and of another from Georgia (No. 3897 U. S. Nat. Mus.). The Kentucky skull agrees with the New Mexican skull in having flattened bullae, large postorbital processes, similarly lyrated temporal ridges, and a deep depression at the base of each postorbital process.

MEASUREMENTS OF SKULLS OF THE GRAY FOX.

	<i>From Kentucky</i>	<i>From New Mexico</i>	<i>From Georgia</i>	<i>From Illinois</i>
Basilar length.....	115 ±	112	115	115 ±
Width at rear of ear opening.....	41	41.5	40	37
Width across postorbitals.....	43.5	42	35	38.3
Interorbital width.....	28	27	24	26
Width at antorbital foramen.....	24	24	24.5	25
Width at canines.....	19.5	19	19.5	18.6
Length pm ⁴	12	11	12	12
Width pm ⁴	5	5	6	6
Length m ¹	8.5	8	8.5	8.6
Width m ¹	10	10	11	11
Length m ²	6.3	6	6	7
Width m ²	8.5	7	9.5	8.6

It is somewhat remarkable that this subspecies should be found so far away from its present habitat. Its occurrence in Kentucky appears to add testimony to the writer's view that at some time shortly after the retirement of the Wisconsin ice there was a period in which the climate was warmer than it now is (*Amer. Jour. Sci.*, ser. 4, vol. 47, p. 363).

Mr. Gerrit S. Miller, Jr., has called the writer's attention to a note published in January, 1921 (*Canad. Field-Naturalist*, vol. XXXV, p. 19), by W. J. Wintemberg, who reported the discovery of several lower jaws and a part of a skull of the gray fox in an old village site in Canada. The locality is in Oxford County, Ontario. This fox has not hitherto been known to have been an inhabitant of Canada. Judging from the remains found it was formerly as abundant as the red fox.